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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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|-----------------|-------------|----------------------|---------------------|------------------|

10/535,654

05/19/2005

Tomoshige Furuhi

M1071.1932

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08/03/2006

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
1177 AVENUE OF THE AMERICAS (6TH AVENUE)
41 ST FL.
NEW YORK, NY 10036-2714

EXAMINER

TRAN, CHUC

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/535,654

Applicant(s)

FURUHI ET AL.

Examiner

Chuc D. Tran

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 05/19/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 13-14 and 19-20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

With respect to claims 13-14 and 19-20, the limitation radio device and radar are not recited in independent claims 1 and 2, they are do not constitute any further limitation. Therefore, claims 13-14 and 19-20 are improper. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 7 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not understand how the control circuit change the resonance elements at fixed positions to another position or substantially 45 degree tilted to the arrangement direction and parallel to each other without detail in Applicant' Specification. It is understood that the control voltage (4) provides voltage to the resonance elements through the variable reactance circuit (202) (Applicant' Page 4, Col. 1, Line 11) (Fig. 12). Applicant is encouraged to implement this type of language in the interest of improving it's clarity.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 8-15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al (USP. 6,188,360).

Regarding claims 1, 4-5 and 13-14, Kato et al disclose an antenna device in Fig. 13, comprising:

- a resonance element array (30), a circuit (7) connected to each of the resonance elements for controlling a resonance frequency of the resonance element (Col. 5, Line 14-24);
- a primary radiator (28) for radiating an electromagnetic wave for excitation to the resonance element array (Abstract); and
- a lens (Fig. 13) disposed such that the position of the resonance element array is substantially a focus plane (Fig. 13).

Regarding claim 14, Kato et al disclose that the antenna device comprising a radar (Col. 9, line 11).

Regarding claims 2-3, 15, and 19-20, Kato et al disclose an antenna device in Fig. 13, comprising:

- a resonance element array (30) for resonating at fixed frequency arranged therein (Col. 1, Line 63), and having variable reactance circuits (7) connected to the resonance elements (Fig. 11); wherein the reactance is changed by applied a control voltage (Col. 6, Line 5);

- a radiator primary radiator (28) for radiating an electromagnetic wave for excitation to the resonance element array (Abstract); and
- a lens (Fig. 13) disposed such that the position of the resonance element array is substantially a focus plane (Fig. 13).

Regarding claim 20, Kato et al disclose that the antenna device comprising a radar (Col. 9, line 11).

Regarding claim 5, Kato et al disclose that the primary radiator hollow resonator opening and an excitation source for exciting the hollow resonator (Abstract).

Regarding claim 8, Kato et al disclose that a variable capacitance diode (7) changing the load reactance to the resonance elements (Col. 5, Line 14), and the control applies a reverse bias voltage to the variable capacitance diode (diode is turned off) (Col. 5, Line 19).

Regarding claim 9, Kato et al disclose that a switching element (7) for switching the load reactance to the resonance element by applying the control voltage (Col. 4, Line 50).

Regarding claims 10 and 11, Kato et al disclose that the switching element is a MEMS ((16) Col. 6, Line 8) (Fig. 7), and distance between electrodes is changed by applying the control voltage to the MEMS (16) (Col. 5, Line 23).

Regarding claims 12 and 18, Kato et al disclose that a feed element is disposed in the center and none-feed elements (diodes) having a reactance loaded therein are disposed around the feed element (Col. 1, Line 21).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6-7 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Kane (USP. 4,381,566).

Regarding claims 6-7 and 16-17, Kato et al disclose an antenna device as set forth in the claims but Kato do not go to details of the plurality of resonance elements are linear conductors which to be extending substantially 45 degree tilted to the arrangement direction and parallel to each other. Kane disclose an antenna device in Fig. 1 and 11, comprising the plurality of resonance elements (1) (Fig. 1) are linear conductors which to be extending substantially 45 degree tilted to the arrangement direction and parallel to each other (Fig. 11). Thus, it would have been obvious to one having ordinary in the art to modify Kato et al by providing the plurality of resonance elements are linear conductors which to be extending substantially 45 degree tilted to the arrangement direction and parallel to each other as taught by Kane. The ordinary artisan would have been motivated to modify Kato et al in the manner described above for eliminating a loss of receiving signal energy transmission between the antenna and the receiver to obtain a high gain See (Kane Col. 1, Line 63).

Citation of relevant prior art

Prior art Henderson (USP. 4,387,378) disclose antenna having electrically positionable phase center.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
July 26, 2006



HOANG V. NGUYEN
PRIMARY EXAMINER